CONTRIBUTIONS TO A KNOWLEDGE OF AUSTRALIAN *CULICIDÆ*. No. iv.*

By Frank H. Taylor, F.E.S.

(From the Australian Institute of Tropical Medicine, Townsville).

(Plates lxxx.-lxxxiii.)

This paper may be divided into two parts, synonymical and descriptive, with notes on previously described species.

Two species described by me from the Northern Territory belong to species recorded from extra-Australian localities; their distribution is noted in the text. The Australian *Anopheles* are also tabulated. It will be seen that very few of the Anopheline genera are recognised, and those only as subgenera, except in the case of *Bironella*.

The new species are distributed in the following genera :— *Pseudoskusea* (one), *Mimeteomyia* (two), *Culicada* (one), *Lophoceratomyia* (one), *Uranotænia* (four), and *Hodgesia* (one).

The type-specimens are contained in the Institute Collection.

The following tabulation of the Australian *Anopheles* is given in the hope that it may prove useful in the determination of the species in question.

Anopheles corethroides, *A. stigmaticus*, and *B. gracilis* have been tabulated from descriptions only, as the Institute does not possess specimens of them. *A. punctulatus* Dönitz, is omitted from the Table, as it is unknown to me either from specimens or description.

It will be seen that all the species, except *B. gracilis*, are placed in the genus *Anopheles*. This is best explained by referring the reader to a paper by A. Alcock,† which deals with the "Classification of the Culicidæ," and with which the writer

* Continued from these Proceedings, 1916, p.574.

† Ann. Mag. Nat. Hist., (8), viii., p.240 (1911).

entirely agrees, as the genera cannot, in some cases, be regarded even as subgenera; while, in others, they form convenient subgeneric or group-names.

Alcock* retains the following as subgenera: *Anophiles* (s.r.), *Myzorhynchus*, *Myzomyia*, and *Nyssorhynchus*. I would add to these the genus *Bironella*, as valid on venational characters—if it really be an *Anopheline*. Theobald, himself, throws doubt on its systematic position.

ANOPHELES.

A. Wings spotted.
  i. Legs unbanded.
    a. Wings with the third, fourth, fifth, and sixth long veins brown- and white-scaled. No costal spots ..... *atratipes* Skuse.
    b. Wings with one fringe-spot..... . ..... *barbirostris* V. d. Wulp.
    bb. Wings with several fringe-spots...*barbirostris* var. *bancrofti* Giles.
  ii. Legs banded.
    a. Wings with numerous light and dark spots.
      Costa with six spots.
      Femora and tibiæ with numerous pale bands, tarsals 1-4 with apical and basal banding ..... *annulipes* Walker.
B. Wings unspotted.
  i. Legs unbanded.
    a. Thorax with long, curved, hair-like scales... *corethroides* Theobald.
    aa. Thorax with three rows of golden-yellow, narrow-curved scales ... . *stigmaticus* Skuse.

BIRONELLA.

A. Wings unspotted, third long vein, stem of second fork-cell, and fifth long vein curved.
  i. Legs unbanded.
    a. First fork-cell very small .... *gracilis* Theobald.

ANOPHELES (MYZORHYNCHUS) BARBIROSTRIS Van d. Wulp, var. BANCROFTI (Giles).

(Plate lxxx., fig.1).

Theobald, Mon. Culicid., v., p.50 (1910); Taylor, Proc. Linn. Soc. N. S. Wales, 1915, xl., p.176.

This is a common and widely distributed species, extending from Darwin, N. Territory, to Eidsvold, S. Queensland.

The male is evidently very retiring, as the only known specimens have been bred from larvæ.

* Journ. Lond. Sch. Trop. Med., ii., p.153 (1913).

ANOPHELES (NYSSORHYNCHUS) ANNULIPES Walker.

Ins. Saund., p.433 (1850); Theobald, Mon. Culicid., v., p.57 (1910); Taylor, Proc. Linn. Soc. N. S. Wales, 1914, xxxix., p.454; Quarantine Service Publication, Melbourne, No.12, 1917.

Hab.—N.S.W.: Hay (W. W. Froggatt). —Victoria: Melbourne (Dr. J. H. L. Cumpston); Kyabram, Bamawm, Echuca, Swan Hill, Mildura, Cohuna, Lake Boga (F. H. Taylor).—S. Australia: Renmark, Cobdogla, Pompoota (F. H. Taylor).—W.A.: Perth, Kalgoorlie (Dr. Atkinson).

This mosquito is probably the most widely distributed species in Australasia, as it extends from Darwin, in the North, across to Papua, throughout the mainland, and southward to Tasmania. It is not improbable that this species will be found in the Pacific Islands.

TOXORHYNCHITES INORNATUS (Walker).

Proc. Linn. Soc Lond, viii., p.102 (1865); Theobald, Mon. Culicid., i., p.223 (1901); *op. cit.*, v., p.110 (1910).

Two male specimens, one of which is quite typical; the other has the mid cross-vein confluent with the posterior cross-vein instead of not meeting it, and also has the second tarsals of the hindlegs with a broad, white, almost basal band, which occupies more than half the joint. It agrees in all other points with Theobald's description of this species.

Hab.—Papua: Itikinumu Plantation (F. P. Dodd).

TOXORHYNCHITES SPECIOSUS (Skuse). (Plate lxxx., fig.2).

Proc. Linn. Soc. N. S. Wales, 1888, xiii., p.1722 (1889); Theobald, Mon. Culicid., v., p.108 (1910).

Hab.—Q.: Townsville (Dr. A. Breinl).

MUCIDUS ALTERNANS (Westwood).

Ann. Soc. Ent. Fr., iv., p.681; Taylor, Proc. Linn. Soc. N. S. Wales, 1914, xxxix., p.455; *op. cit.*, 1915, xl., p.176.

Hab.—Victoria: Kyabram (F. H. Taylor).

This species is known to range from Darwin to Victoria.

ARMIGERES BREINLI Taylor; *Neosquamomyia breinli* Taylor. (Plate lxxx., fig.3).

Trans. Ent. Soc., London, 1914, Pt. i., p.186.

The genus *Neosquamomyia* was founded partly on the male genitalia, the other characters agreeing with *Armigeres*.

When proposing the genus, I was unaware that similar characters were to be found in species of the genus *Armigeres*, notably *A. malayi* Leicester.

Edwards* notes the similarity of *A. malayi* Leic., and *N. breinli* Taylor, and suggests that the correct position for the latter species is in *Armigeres*, a decision with which I quite agree. The two species are distinct, but certainly closely related.

PSEUDOSKUSEA CAIRNSENSIS, sp.n.

♀. Head clothed with black, flat, and upright-forked scales; palpi dusky; antennæ dark brown; proboscis black.

Thorax dark reddish-brown with brown scales, scutellum similar; pleuræ brown, with white, flat scales.

Abdomen black-scaled, unbanded, segments three to the apex with basal, lateral, white patches; venter pale-scaled.

Legs black, unbanded; ungues equal and simple.

Wings brown-scaled; first fork-cell longer and narrower than the second, its base nearer the base of the wing; stem of first fork-cell one-third the length of its cell, stem of second fork-cell slightly more than half the length of its cell; anterior basal cross-vein longer than, and twice its own length distant from, the anterior cross-vein. Length, ?

Hab.—Queensland : Cairns (F. H. Taylor).

Described from a single specimen bred from a mixed lot of larvæ. It is readily distinguished from *P. multiplex* Theobald, on venational characters, ungues, and the abdominal spots. It differs from *P. basalis* Taylor, in not having a banded abdomen.

MIMETEOMYIA ATRIPES (Skuse).

Stegomyia punctolateralis Theobald.

Proc. Linn. Soc. N. S. Wales, 1888, xiii., p.1750 (1889); Theobald, Mon. Culicid, iv., p.190 (1907); Taylor, Proc. Linn. Soc. N. S. Wales, 1914, xxxviii., p.750 (1915) (*Scutomyia*); *op. cit.*, 1915, xl., p.177 (*Stegomyia*).

It is quite evident, from specimens recently collected by myself,

* Bull. Ent. Res., vii., p.207 (1917).

that Skuse's species has the apical lateral spots on all the abdominal segments, and *not* only on the sixth to eighth segments, as stated in my paper (1914). The Ingleburn specimens show that the spots vary somewhat in size on the basal segments, so that they were either overlooked in the type, or the abdomen was partially abraded.

There is also no doubt at all that *Stegomyia punctolateralis* Theobald, is the same as *M. atripes* (Skuse). *S. punctolateralis* Theob., was unknown to me, except from description, when I stated (1914) that the two were different species; but, since then, Dr. Bancroft has presented a series of both sexes to the Institute, which clearly show they are the same as Skuse's species.

Theobald states that the mid-ungues of the male are unequal and simple; this is an error, as the larger is uniserrate.

Neveu-Lemaire* places *M. atripes* in *Theobaldia*, and records it from Guyane. He states that the fore- and mid ungues of the female are uniserrate; and he gives a figure of the wing-scales of his specimens, which proves conclusively that he was not dealing with Skuse's species. He also states that the palpi are four-jointed.

There is no doubt that it belongs to the genus *Mimeteomyia*, as, *inter alia*, the apex of the abdomen is very bristly.

Hab.—Q.: Eidsvold (Dr. Bancroft), Burketown, Townsville (F. H. Taylor).—N.S.W.: Milson Island (Dr. Ferguson), Blackheath (W. A. Thompson), Ingleburn (F. H. Taylor).—Vic.: Mildura (F. H. Taylor).

Mimeteomyia atra (Taylor).

Stegomyia atra Taylor, Trans. Ent. Soc. London, 1914, p.190.

A re-examination of the type of this species reveals the fact that it should, more correctly, be placed in the genus *Mimeteomyia*, on account of its bristly and truncated apex of the abdomen, among other points of agreement with the genus.

Mimeteomyia pulcherrima, sp.n.

♂. Head covered with brown, flat scales, with a median row of white ones, and white ones laterally; antennæ pale, nodes and

* Arch. Parasitologie, vi., p.615 (1915).

plumes brown, basal lobes with white, flat scales; eyes wine-red; palpi brown-scaled, first segment with two prominent white bands, penultimate and apical segments with white, basal bands.

Thorax with dark brown scales, and ornamented with a lyre-shaped pattern of small, white, flat scales; prothoracic lobes with white scales and black bristles; scutellum with white, flat scales; pleuræ brown, with patches of white, flat scales.

Abdomen brown-scaled, expanded apically, segments one to six with small, median, white, basal patches; all segments, except the first, with white, lateral, basal patches, prominent in the last three segments; genitalia with numerous black bristles; venter brown-scaled, with median, white, basal patches on the first seven segments.

Legs brown, knees white, first and second fore- and mid-tarsals with basal, white banding, posterior tarsi one to three with broad, white, basal bands, fourth white, with a narrow, brown, apical band, fifth white; ungues of fore- and mid-legs unequal, the larger with a distinct notch, hind equal and simple.

Wings: bases of fork-cells equal, first longer and narrower than second, stem of first fork-cell not quite half the length of its cell, stem of second slightly more than half the length of its cell, anterior basal cross-vein longer than, and twice its own length from, the anterior cross-vein; vein-scales brown.

Length, 3 mm.

Hab.—Q.: Cairns (F. H. Taylor).

Described from a single specimen, bred from a collection of larvæ. It is abundantly distinct from all other Australian species of *Mimeteomyia*.

Mimeteomyia doddi, sp.n.

♂. Head covered with black scales, a median row of white, flat ones, and white, flat ones laterally; antennæ brown, plumes brown, internodes pale; palpi brown, penultimate segment basally banded white, apical segment white-scaled; eyes silvery.

Thorax covered with dusky-brown scales; scutellum with brown scales; pleuræ brown, with patches of white, flat scales.

Abdomen covered with coppery-brown scales, first segment

brown-scaled, second with a median, basal, white-scaled spot, third to fifth and apical segments with white, basal banding, all segments with white, lateral, basal spots; venter brown, with white basal banding and numerous pale hairs.

Legs dusky-brown, first tarsals of forelegs basally banded white, the rest unbanded, first tarsals of mid-legs basally banded white [the rest broken off], posterior tarsi one to three basally banded white, fourth unbanded, fifth white: ungues of forelegs unequal, the larger with a tooth, hind equal and simple,

Wings: first fork-cell longer and narrower than the second, its base nearer to the base of the wing; stem of first fork-cell one-third the length of its cell, stem of second slightly more than half the length of its cell, anterior basal cross-vein longer and twice its own length from the anterior cross-vein.

♀. Similar to ♂. Antennæ brown, basal half of first joint yellow; apical third of palpi white. Abdomen: fourth and fifth segments with basal, white banding, apex of abdomen white-scaled, and with numerous pale bristles, all the segments, except the first, with lateral, white, basal spots; second segment with a white, median, basal spot; venter pale-scaled, apical segments black-scaled.

Legs similar to those of ♂, second tarsals of mid-legs with white basal banding; ungues equal and simple. Wings as in ♂.

Length: ♂, 2·5; ♀, 3·5 mm.

Hab. — Papua: Itikinumu Plantation (F. P. Dodd).

A very distinct species, readily distinguished from *M. pulcherrima* mihi, by its palpi, thoracic and abdominal markings. There is little doubt that the female belongs to the same species.

It affords me much pleasure to name it in honour of its discoverer.

GRABHAMIA THEOBALDI Taylor. (Plate lxxxi., fig.4).

Theobald, Mon. Culicid., iv., p.304 (1907). *C. flavifrons* Theob., *nec* Skuse, Proc. Linn. Soc. N. S. Wales, 1913, xxxviii., p.751 (1914).

Were it not for intergrading forms, it would be possible to make two distinct "species" out of the series of specimens before

me, on abdominal markings alone, as, in some specimens, the abdomen is quite typical, whilst, in others, it varies from specimens with distinct basal banding on the first two segments of the abdomen, and the remainder with more or less indefinitely banded and mottled, to those with indefinite basal banding and dense mottling of creamy scales on all the abdominal segments.

The base of the second fork-cell is slightly nearer the base of the wing than that of the first, while they are nearly level in the type.

Specimens from Eidsvold, Queensland, show similar intergradient forms to the above Victorian specimens.

Hab.—Vic.: Bamawm, Kyabram, Mildura, and Echuca (F. H. Taylor).

CULICADA WILSONI, n.sp. (Plate lxxxi., figs.5, 6, 7).

♂. Head black, covered with yellowish, narrow-curved and upright-forked scales, with a few yellowish hairs projecting over the eyes, sides of head with flat ones; palpi longer than proboscis, black, first joint pale-scaled, except the apical fourth, pubescence black on the apical segment, and apex of first, yellowish-brown on the penultimate segment; antennæ pale, nodes dark, plumes brownish-black, dense.

Thorax black, covered with yellowish, narrow-curved scales; prothoracic lobes with flat ones; scutellum similar; pleuræ black, with flat scales.

Abdomen black, first segment pale-scaled, second to seventh with broad, yellowish, basal banding; sixth, seventh, and eighth mottled; some specimens show median pale-scaled bands on most of the segments; genitalia with some long, black hairs, lateral pubescence dense, yellowish; venter pale.

Legs black, femora pale beneath; femora, tibiæ, and tarsi mottled; fore-ungues unequal, uniserrate, mid unequal, the larger deeply notched, the smaller uniserrate, hind equal and simple.

Wings with brown scales; first fork-cell longer and narrower than the second, base of latter nearer the base of the wing, stem of the first almost as long as its cell, stem of second as long as the cell; anterior basal cross-vein about as long as, and nearly

its length from, the anterior cross-vein; second incrassation well marked.

♀. Similar to ♂; antennæ black, basal lobes black, with creamy-yellow scales, basal half of second joint pale, verticillate hairs black, pubescence pale; palpi four-jointed, black-scaled, with intermixed, scattered, pale scales; proboscis black; fore femora pale-scaled, mid and hind pale, with an apical black ring, tibiæ and first tarsals mottled with pale scales; fore- and mid-ungues equal, uniserrate; penultimate abdominal segment creamy-scaled except for a small oblique apical line of dark scales, apical creamy-scaled. Wings similar to those of the male; but fork-cells relatively longer, stem of first fork-cell two-thirds the length of its cell, that of second about three-fifths of the cell.

Length: ♂, 7·5; ♀, 6 mm.

Hab.—Vic.: Kyabram, Echuca, Bamawm, Swan Hill, and Mildura (F. H. Taylor).

This appears to be a well-defined species related to *C. tasmaniensis* Strickland, differing, *inter alia*, in the wing-venation, and the mottled femora, tibiæ, and first tarsals. *C. wilsoni* was present in enormous numbers in the Goulburn Valley district, Kyabram and Bamawm being inundated with them. There is a small area of cypress-pine (*Callitris* sp.) at Bamawm, and it was impossible for man or beast to remain in it for even a few minutes, owing to the abundance of this mosquito.

I have much pleasure in dedicating this species to Mr. Wilson, of Bamawm, who rendered me much help and kindly service while I was in that district.

Ochlerotatus notoscriptus (Skuse).

Proc. Linn. Soc. N. S. Wales, 1888, xiii., p.1738 (1889) [*Culex*]; Theobald, Mon. Culicid., v., p.200 (1910) [*Scutomyia*]; Edwards, Ann. Mag. Nat. Hist., (8), ix., p.523 (1912).

Hab. N.S.W.: Ingleburn.—Vic.: Swan Hill (F. H. Taylor).

Culex sitiens Wiedemann.

Aussereurop. zweiflüg. Ins., p.544 (1828); Theobald, Mon. Culicid., v., p.331 (1910); Taylor, Proc. Linn. Soc. N. S. Wales, 1916, xli., p.570.

Hab.—Q.: Cairns, Innisfail (F. H. Taylor).—Papua (F. P. Dodd).

This common mosquito enjoys a wide distribution, being found from Java through Papua and Torres Straits to Victoria.

Culex concolor Desvoidy.

Mém. Soc. d'Hist. Nat. Paris, iv., p.405 (1825); Edwards, Bull. Ent. Res., ii., p.262 (1911).

Hab.—Q: Innisfail (F. H. Taylor).

A short series, bred from larvæ, have been compared with specimens from other Australian localities, and also with specimens of *C. concolor*, *C. tigripes*, *C. consimilis*, and the form described as *C. tigripes* var. *fusca*, which have been received from the Imperial Bureau of Entomology; and there is absolutely no doubt, as Edwards states, that the Australian form belongs to *C. concolor*.

All references dealing with *C. tigripes*, as from Australia, should, therefore, refer to *C. concolor*, and *C. tigripes* should be expunged from the Australian list.

Culex bitæniorhynchus Giles.

Journ. Bombay Nat. Hist. Soc., xiii., p.607 (1901); Edwards, Bull. Ent. Res., iv., p.231 (1913). *C. abdominalis* Taylor, Rep. Aust. Inst. Trop. Med., 1911, p.53 (1913).

Edwards gives several synonyms of *C. bitæniorhynchus* Giles, in his paper, and mentions *Culicelsa abdominalis* Taylor, also as a possible synonym.

I have compared specimens of my species with six specimens of *C. bitæniorhynchus* Giles, from Hong Kong, and can see no valid reason for treating them as a distinct species, thus confirming the opinion held by Edwards.

Culex vishnui Theobald.

Mon. Culicid, i., p.355 (1901) (♀ only); Edwards, Bull. Ent. Res., iv., p.233 (1913). *C. parvus* Taylor, Bull. N. Territory, 1*a*, p.27 (1912).

Edwards included *C. parvus* Taylor, as a probable synonym of *C. vishnui*, when dealing with its synonymy in his paper. I

quite agree with this, and place *C. parvus* definitely as a synonym of *C. vishnui* Theobald.

It seems to me that *C. vishnui* Theobald, is closely related to *C. sitiens* Wied.

Culex townsvillensis, nom.nov.

Culicelsa fusca Taylor.

Trans. Ent. Soc. London, 1914, p.699.

A change of name is necessary, as *fuscus* is preoccupied in Culex.

The sixth and seventh segments of the abdomen have the sides covered with white scales, except the apex; eighth pale-scaled, unbanded. The fore- and mid-ungues are unequal, and *not* equal, as stated in the description, the mid more so than the fore. There is also a small branched process on the undersurface at the base of the ungues in both legs. Genitalia of male of typical Culex-form.

♀. Similar to ♂. Palpi brown-scaled; apex of abdomen hairy. First fork-cell longer and narrower than second, its base nearer the base of the wing than that of the latter, stem of the first about one-third the length of the cell, stem of the second slightly more than half the length of the cell; hind-tibiæ the same length as first tarsals; ungues equal and simple.

Hab.—Q.: Townsville (F. H. Taylor).

The above corrections in the description of the male are based on fresh material, which agrees perfectly with the type. It appears to be an uncommon species.

Culex fatigans Wied.

Aussereurop. zweiflug. Ins., p.10 (1828); Taylor, Trans. Ent. Soc. London, 1914, p.197.

Hab.—N.S.W.: Sydney (F. H. Taylor).—Vic.: Melbourne (Dr. Cumpston), Kyabram, Echuca, Mildura, Bamawm, Swan Hill (F. H. Taylor).—S. Australia: Renmark, Cobdogla, Overland Corner, Pompoota, Adelaide (F. H. Taylor).

C. fatigans is a common mosquito in Southern Australia. It occurred abundantly at Kyabram and Echuca, where it was

breeding in enormous numbers in the irrigation-channels and street-watertables.

LOPHOCERATOMYIA CAIRNSENSIS, sp.n. (Plate lxxxii., figs.8, 9).

♂. Head clothed with brown, narrow-curved, and black, upright-forked scales; antennæ pale, apical segments and nodes dark brown, plumes brown, accessory organs long on segments five, eight, and ten, apices spoon-shaped on eighth, short on sixth and seventh; palpi black, penultimate and apical segments with black hairs beneath, thumb-like process dark brown; eyes black.

Thorax and scutellum with brown, narrow-curved scales; scutellar bristles black, long; pleuræ brownish.

Abdomen black-scaled, unbanded, apex bristly, segments three to seven with faint, lateral, basal spots; venter dark.

Wings: first fork-cell longer and narrower than the second, the former nearer the base of the wing; stem of first fork-cell about half the length of its cell, stem of second about two-thirds; anterior basal cross-vein longer than anterior cross-vein, and nearly thrice its own length distant from it; scales brown.

Legs black, unbanded; ungues of forelegs unequal, the larger uniserrate, mid-ungues unequal and simple, hind equal and simple.

♀. Similar to ♂. Palpi black-scaled, first segment with a few black bristles; clypeus black; antennæ brown; ungues all equal and simple; abdominal spots well defined.

Length: ♂, 3·5; ♀, 4 mm.

Hab.—Q.: Cairns (F. H. Taylor).

Described from seven males and ten females, bred from larvæ. It is abundantly distinct from *L. annulata* Taylor, and *L. cylindrica* Theobald.

Two males and one female have the bases of the fork-cells almost level, but there are no other differences from the typical specimens.

LOPHOCERATOMYIA ANNULATA Taylor.

Proc. Linn. Soc. N. S. Wales, 1916, xli., p.571.

Hab.—Q.: Cairns (F. H. Taylor).

A single specimen, bred at the same time as *L. cairnsensis* mihi; it agrees with the type in all respects.

LOPHOCERATOMYIA CYLINDRICA Theobald.

Mon. Culicid., iii., p.202 (1903) [*Culex*], Pl. ix.; *op. cit.*, v., p.361 (1910); Edwards, Bull. Ent. Res., vii., p.228 (1917).

Hab.—Q.: Eidsvold (Dr. T. L. Bancroft).

I quite agree with Edwards in placing this species in *Lophoceratomyia*. It is typical in every respect. The figure of the head of the male on Plate ix., though small, shows the plates on the antennæ.

MANSONOIDES UNIFORMIS (Theobald).

Theobald., Mon. Culicid., v., p.448 (1910); Edwards, Bull. Ent. Res., ii., p.253 (1911).

Hab.—N. Territory: Darwin (G. F. Hill).—Q.: Eidsvold (Dr. Bancroft), Cairns, Townsville.—N.S.W: Newcastle (Dr. Dick).

This is a very abundant and widely distributed species, being found from Africa to the Philippine Islands, New Guinea across to Darwin, and extending as far as Newcastle, N.S.W.

FINLAYA POICILIA Theobald.

Mon. Culicid., v., p.464 (1910); Taylor, Proc. Linn. Soc. N. S. Wales, 1914, xxxix., p.465.

Hab.—Q.: Cairns (F. H. Taylor).

MOLPEMYIA PRIESTLEII (Taylor). (Plate lxxxii., fig.10).

Calomyia priestleii Taylor.

Trans. Ent. Soc. London, 1913, Part iv., p.684 (1914).

Calomyia cannot be retained as distinct from *Molpemyia*, there being no structural differences. The writer was in error in describing the scales on the centre of the head and bordering the eyes as spindle-shaped, as they are, in reality, only large *narrow-curved* scales.

The species seems to be somewhat variable, as a specimen, taken at a later date than the type, shows complete broad banding on the abdomen, whereas, in the type, the abdomen has large, basal spots on the segments.

SKUSEA PSEUDOMEDIOFASCIATA Theobald.

Mon. Culicid., v., p.489 (1910).

Hab.—Q.: Cairns (F. H. Taylor).

Two specimens, both males, before me, agree perfectly with

the description of this species They were bred from larvæ. It was originally described from Ceylon.

URANOTÆNIA ALBESCENS Taylor.

Trans. Ent. Soc. London, 1914, Pt. i., p.705.

Hab. – Q.: Cairns (F. H. Taylor).

The fourth segment of the abdomen is more correctly described as brown, with a median, apical, white-scaled area. The Cairns specimens, bred from larvæ, show the fourth segment entirely black.

URANOTÆNIA CAIRNSENSIS, sp.n.

♀. Head with dusky-brown, flat scales, with a fairly broad band of bluish-white scales round the eyes; antennæ dark brown, basal lobe and base of first segment yellowish, palpi black; clypeus dark brown; eyes silvery; proboscis dusky-brown.

Thorax brown, with brown scales and black bristles; scutellum with flat, black scales; pleuræ with white, flat scales; there is a short, pre-alar, white line of scales.

Abdomen with dusky-brown scales, all the segments with lateral, white scales; venter with white scales.

Legs dark brown, femora pale beneath, ungues very small, equal and simple.

Wings longer than abdomen; first fork-cell shorter and narrower than second, latter considerably nearer the base of the wing, stem of first more than twice the length of its cell, stem of second slightly longer than its cell; anterior basal cross-vein longer than the anterior cross-vein, and nearly twice its length from it; halteres pale, with black knobs.

Length 1·5 mm. (vix).

Hab.—Q.: Cairns (F. H. Taylor; July, 1917).

Described from two specimens, bred from larvæ. It is easily separated from other Australian species by its venational and abdominal markings.

URANOTÆNIA TIBIALIS, sp.n. (Plate lxxxii., fig.11).

♂. Head clothed with white scales, except in the centre, where they are brown; antennæ brown, basal lobes black, basal half of first segment pale; palpi dark brown; eyes black; proboscis brown.

Thorax with brown scales, and long, black bristles, apparently in four rows; a short, pre-alar line of bluish-white scales; scutellum with brown scales, pleuræ brownish, with bluish-white, flat scales.

Abdomen covered with black scales; venter brown-scaled.

Wings longer than abdomen; first fork-cell shorter and narrower than second; base of latter much nearer the base of the wing; stem of the first nearly twice the length of its cell; stem of second about the length of its cell; anterior basal cross-vein longer than anterior cross-vein, and once and a half its length from it.

Legs dusky-brown, femora basally pale beneath; apex of fore-tibiæ with a tuft of long, brown, hair-like scales, second tarsal clothed with fairly long scales, tarsi three to five pale; ungues of forelegs simple, rectangular, mid apparently the same.

♀. Similar to male Scales on the costa, subcostal and first longitudinal veins dusky as in male. Fore tibiæ normal.

Length: ♂, 1·75; ♀, 1·5 mm.

Hab.— Q.: Cairns (F. H. Taylor).

Described from one male and two female specimens, bred from larvæ. The black abdomen, venation, and fore-tibiæ of the male render this species distinct from its Australian congeners. The lengths are only approximately correct, as the specimens are doubled up.

URANOTÆNIA PROPRIA Taylor.

Trans. Ent. Soc. London, 1914, Pt. iv., p.704.

♀. Similar to male. First fork-cell shorter and narrower than second; stem of former nearly twice the length of its cell, stem of latter slightly longer than cell, anterior basal cross-vein longer than anterior cross-vein, and once and one-half its own length from it. Legs normal.

Hab. Q.: Cairns (F. H. Taylor).

This species was, previously, only known from the male.

URANOTÆNIA ANTENNALIS, sp.n.

♀. Head with pale scales in the centre, blackish elsewhere; eyes black; antennæ brown, basal lobes yellowish, first segment

very long, about twice the length of the second, its base pale; palpi blackish.

Thorax brown, with brown scales and black bristles, and a short, narrow, pre-alar, white line of scales; scutellum with black scales; pleuræ brown, with white scales.

Abdomen covered with black scales; venter brown-scaled.

Legs dusky-brown; femora pale beneath, apical tarsi pale.

Wings: first fork-cell shorter than second, stem of first fork-cell about twice and one-half the length of the cell; stem of the second slightly longer than the cell; anterior basal cross-vein longer than anterior cross-vein, and twice its own length from it; scales on the costa, subcostal, and first long vein dusky, paler elsewhere.

Length 1·75 mm.

Hab.—Q.: Cairns (F. H. Taylor).

Described from two specimens, bred from larvæ. The first joint of the antennæ, and the venation separate this species from other described Australian species.

URANOTÆNIA HILLI, sp.n. (Plate lxxxiii., fig.12)

♂. Head covered with brown, flat scales; antennæ pale, nodes brown; eyes black and silvery; palpi brown, slightly longer than usually found in the genus.

Thorax covered with dusky-brown scales, prothoracic lobes prominent, dark-scaled; scutellum dark, denuded of scales; pleuræ yellowish-brown.

Abdomen with black scales; venter pale-scaled.

Legs dark brown; femora pale beneath.

Wings: fork-cells the same length, base of the second nearer the base of the wing; stem of the first fork-cell slightly shorter than its cell, stem of second not quite one-third shorter than its cell; anterior basal cross-vein longer than the anterior cross-vein and about once and one-half its own length distant from it.

Length 2 mm.

Hab.—N. Territory: Darwin (G. F. Hill; No.321).

Described from two specimens. The length of the first fork-cell is relatively longer in comparison with the second than is

found in *Uranotænia,* but I prefer to regard this species as belonging to that genus.

Mr. Hill notes "larvæ in crab-holes in mangrove-swamps." It affords me much pleasure to dedicate this species to its discoverer.

Paratype in Coll. Hill.

Hodgesia cairnsensis, sp.n. (Plate lxxxiii., figs.13, 14).

Head with black and bluish scales. Thorax orange, with prominent black markings. Abdomen black-scaled, fifth segment apically white, the second to sixth segments laterally white. Legs unbanded.

♀. Head with black scales, with a triangular patch of bluish-white scales on the occiput and on the sides towards the base; eyes, palpi, and proboscis black; antennæ black, first joint long, basal half yellowish.

Thorax orange, with a prominent black spot above the wing-roots, and a broad, median, brown stripe from the centre to the posterior margin of the scutellum, sparsely covered with short, hair-like scales; scutellum pale on the sides, covered with small, black scales; prothoracic lobes with pale, flat scales.

Abdomen with black scales, first segment paler, segments two to six with lateral, white patches, fifth with a broad, white-scaled, apical band, apex bristly; venter pale-scaled, apical segment dark.

Wings considerably longer than abdomen, black-scaled: first fork-cell longer and narrower than second, base of the latter a little nearer the base of the wing; stem of the first fork-cell about three-quarters the length of the cell, stem of second about two thirds of its cell; base of second long vein carried well beyond the transverse vein; halteres pale, with black knobs.

Legs black; femora with the basal half above, and the under-surface, creamy; ungues very small, equal and simple.

Length, 1·5 mm.

Hab. – Q.: Cairns (F. H. Taylor).

Described from a long series taken in shady situations, on the edges of swamps, mainly sheltering in tree-holes. It is readily distinguished from *H. triangulata* Taylor, by its thorax and abdominal banding.

HODGESIA TRIANGULATA Taylor. (Plate lxxxiii., fig.15).

Trans. Ent. Soc. London, 1914, Pt. i., p.204; Proc. Linn. Soc. N. S. Wales, 1915, xl., p.184.

Hab.— Q.: Cairns (F. H. Taylor).

Fresh specimens show that segments two, three, five, and six have white, lateral spots, and that the venter is white-scaled.

This species is wrongly recorded as *Hodgesia trimaculatus* in the Zoological Record, li., Insecta, xii., p.277, 1914 (1916).

EXPLANATION OF PLATES LXXX.-LXXXIII.

Plate lxxx.

Fig.1.—*Anopheles* (*Myzorhynchus*) *barbirostris* var. *bancrofti* (Giles); head of male.
Fig.2.—*Toxorhynchites speciosus* (Skuse); head of male.
Fig.3.—*Armigeres breinli* Taylor; genitalia of male.

Plate lxxxi.

Fig.4.—*Grabhamia theobaldi* Taylor; wing.
Fig.5.—*Culicada wilsoni*, sp.n.; head of male.
Fig.6.—*Culicada wilsoni*, sp.n.; genitalia of male.
Fig.7.—*Culicada wilsoni*, sp.n.; wing of female.

Plate lxxxii.

Fig.8.—*Lophoceratomyia cairnsensis*, sp.n.; head of male, showing antennary organs.
Fig.9.—*Lophoceratomyia cairnsensis*, sp.n.; wing.
Fig.10.—*Molpemyia priestleii* Taylor; wing of female.
Fig.11.—*Uranotænia tibialis*, sp.n.; wing.

Plate lxxxiii.

Fig.12.—*Uranotænia hilli*, sp.n.; wing.
Fig.13.—*Hodgesia cairnsensis*, sp.n.; wing.
Fig.14.—*Hodgesia cairnsensis*, sp.n.; portion of wing under high power.
Fig.15.—*Hodgesia triangulata*, sp.n.; wing.